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THE SCOTTISH NATURALIST

Founded 1871

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Although the journal's main interests have always centred on the history and distribution of Scottish fauna and flora, it is prepared to publish contributions on the many aspects of Scottish natural science embraced by its title, including Zoology, Botany, Geology, History, Geography, Medicine and the allied sciences, Archaeology, and the Environment.

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Authors of papers, but not of short notes, will receive thirty reprints in covers free of charge. Additional reprints may be ordered, at cost, when the proofs are returned.

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Founded 1871

A Journal of Scottish Natural History

With which is incorporated *The Annals of Scottish Natural History*
and *The Western Naturalist*

114th Year

2002

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EDITORIAL

The Natural World of the Traills

James W.H. Trail

A.M., M.D., F.R.S., F.L.S.

Probably the best-known member of all the Traill family is Professor James William Helenus Trail (1851-1919), Professor of Botany in the University of Aberdeen for forty-three years from 1877 until his death in 1919. Professor Trail was one of Scotland's most distinguished botanists, and also played a very prominent part in the early development of our national journal of natural history, the *Scottish Naturalist*. From 1883 to 1890 he was the sole Editor, having taken over after the retirement of the founding Editor, Dr. Francis Buchanan White, and later he formed part of the remarkably talented triumvirate of William Eagle Clarke, James W.H. Trail and J.A. Harvie-Brown, who edited the journal, as the *Annals of Scottish Natural History*, from 1892 to 1911. All told, Professor Trail was an Editor of the journal for twenty-eight years.

Professor Trail died on 18th September 1919, and obituaries were published in many places, including the *Scottish Naturalist* for 1920, pages 1-5. In addition, to commemorate Professor Trail's life and immense achievements, a complete *Trail Memorial Volume*, including a bibliography of his extensive publications, was published by the Aberdeen Natural History and Antiquarian Society in 1923, as Volume 4 of the Society's series of publications; copies were also available for sale to the general public.

Most interested Scottish naturalists will already be very familiar with Professor Trail's name, and will know something of his reputation and achievements, but what some Scottish naturalists nowadays may not know is that many other members of the Trail (or Traill) family, often distinguished practitioners of medicine or science, also made significant contributions to several branches of natural history, both at home and abroad. Other well-known Traill names in Scottish natural history, of course, are Professor Thomas Stewart Traill, Dr. William Traill and George W. Traill, each of whom published important papers in Scottish natural science journals, but there are many others - a truly remarkable family. The Trail family originated from Orkney, where Professor J.W.H. Trail and most other members of the family were born, but many of the family departed early to the rest of Britain or Ireland, or even further afield to Australia, India, Canada.

and New Zealand, where several Traills settled in the 19th century and "fostered a brood of naturalists" who made important contributions to the developing natural history knowledge of their new countries.

Mrs Sheila Natusch (née Traill), of Wellington, New Zealand, is a well-known historian and naturalist who is the author of many publications on New Zealand life and natural history, including a volume on *The Natural World of the Traills* which, as well as a biography of Professor James W.H. Trail, contains biographies of twelve other members of this remarkable family. The sub-title, 'An Investigation into some of the Nineteenth Century Naturalists of a Particular Family in Scotland and the Colonies', gives a good idea of the book's interesting scope. Since this publication is likely to be completely unknown to most Scottish naturalists, it seems desirable to draw attention to its existence.

The Natural World of the Traills is a paper-back octavo volume of 100 pages, originally published in 1996. Since then, although the original booklet is apparently now out-of-print, as additional information has come to light the relevant sections have been upgraded, and the volume has been reprinted and reproduced with spiral comb binding. The volume costs 29.95 New Zealand dollars, plus air-mail postage of 8.61 New Zealand dollars. With current (variable) exchange rates of some 3.25 N.Z. dollars for one British pound, this comes to a total of just under £12.00.

Copies of the booklet can be obtained from Mrs Sheila Natusch, Nestegg Books, 46 Owhiro Bay Parade, Wellington 6002, New Zealand. Probably it would be sensible to send a preliminary letter to Mrs Natusch to enquire about suitable methods of payment, but local enquiries suggest that the easiest way to pay would be directly by sending New Zealand currency, which can be obtained from main Post Offices, Banks, and some Travel Agents; present information is that the Post Office does not make a charge for obtaining foreign currency.

This booklet on the Traills is the product of considerable research, is well annotated, and is very much recommended to anyone who is interested in the early history of Scottish naturalists or the natural history of Scotland.

THE ROMAN ROAD IN THE CADDON WATER VALLEY

By WILLIAM LONIE and FRANK NEWALL

Renfrewshire Natural History Society

Introduction

The remains of a Roman road can be traced for some 9.0 km north-north-east from Holylee in the River Tweed valley to near Compass Slack in the Lugate Water valley. En route, the road runs in the Caddon Water valley for some 5.0 km, hence the suggested road-name. Holylee stands on the line of the Tweed Valley Roman road (Ordnance Survey, 1956). This road shows clearly 1.5 km downstream about Thornylee. Compass Slack is in an upland valley some 11.0 km from the nearest known Roman feature on any projected route. The location map indicates the topography and survey stations along the route.

The junction of Roman roads at Holylee would be a suitable site for a Roman fort or fortlet, nearly equidistant from the Roman forts at Newstead (20 km) and Lyne (23 km), but such a site eludes discovery. Compass Slack is clearly not the northern terminus of the road, but search both on the ground and on air-photographs has so far failed to reveal the onwards course of the road with certainty. Some 3.0 km to the east of Compass Slack runs the Gala Water valley. Though this valley offers passage from Tweeddale to the Lothian plains, the way is long and narrow and no Roman sites or road are known in it. Beyond the Gala Water, 11.0 km to the north-east of Compass Slack and 19.0 km from Holylee, are the sites of the Roman fortlet of Oxton, putatively Flavian (Frere, 1987) and possibly Antonine (Martin, 1968) and the great Roman camp of Channelkirk, Severan (Breeze, 1982). Both of these sit by Roman Dere Street at the head of Lauderdale, on the passage into the Lothians by Soutra Hill.

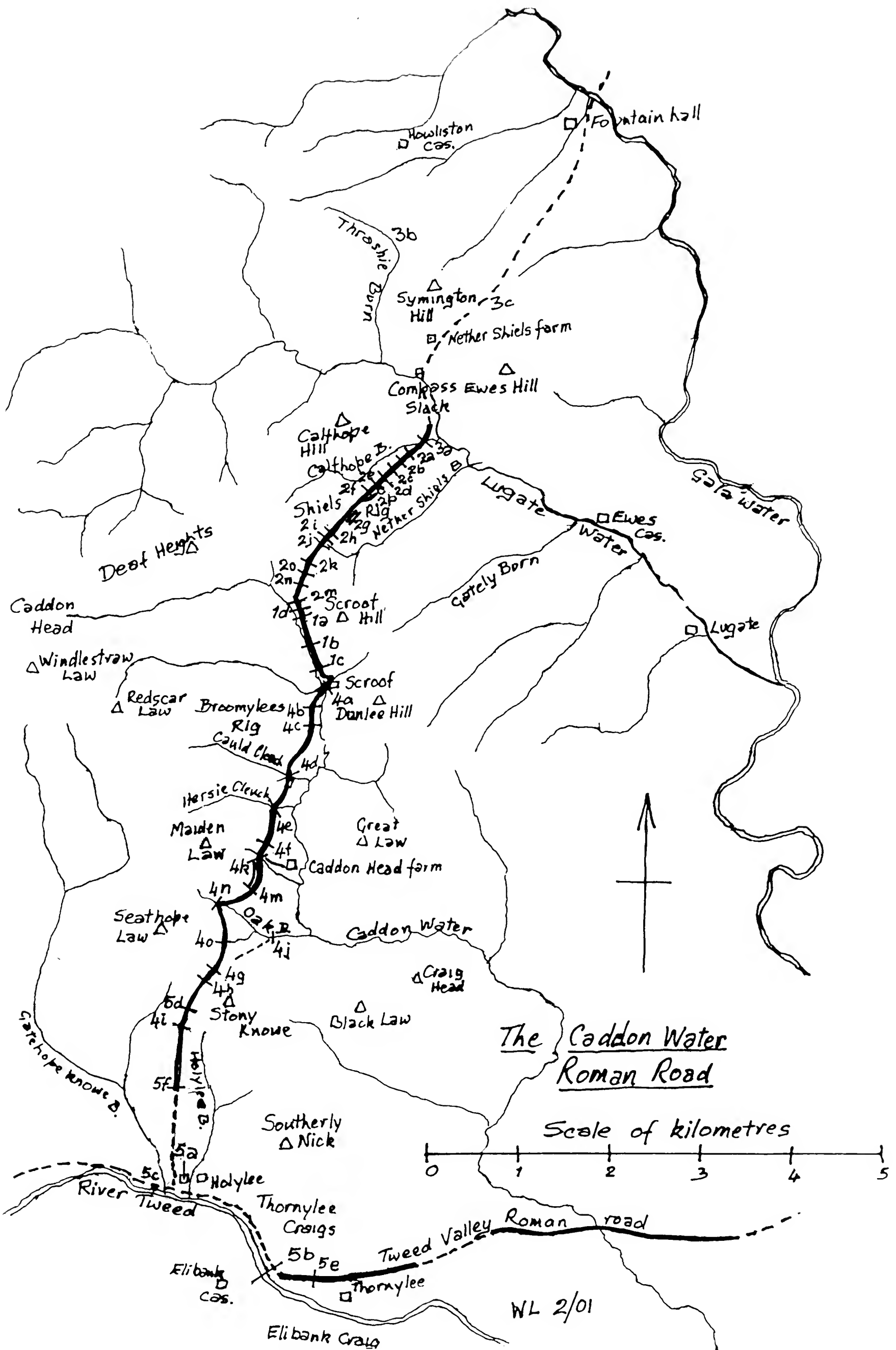
The Caddon Water Roman road probably offered a link between the upper Tweed valley and Soutra pass of Dere Street, some 24 km shorter, a full day's march, than the route via Newstead. On the strategic scale, the road skirts to the south-east of the massif of Windlestraw and Deaf Heights, and encompasses on its south-east side the lesser heights and grasslands that became Lauder Common and the pastoral wealth of Melrose Abbey.

The studies, mainly search-surveys, were made by the authors, variously together, alone, or with the companions noted. The surveys are given in the

Map 1**The Caddon Water Roman Road
showing location points**

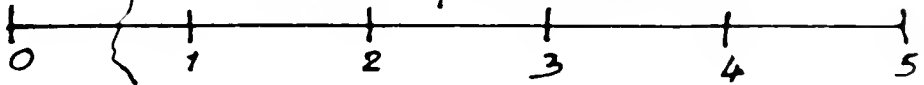
(1a) (1b) (1c) (1d)
 (2a) (2b) (2c) (2d) (2e) (2f)
 (2g) (2h) (2i) (2j) (2k) (2l)
 (2m) (2n) (2o) (2p)
 (3a) (3b) (3c)
 (4a) (4b) (4c) (4d) (4e)
 (4f) (4g) (4h) (4i) (4j)
 (4k) (4l) (4m) (4n) (4o)
 (5a) (5b) (5c)
 (5d) (5e) (5f)

**as referred to in the text or
illustrated in the Figures**



The Caddon Water Roman Road

Scale of kilometres



WL 2/01

sequence and direction in which they were done on the ground. Attempts to order them otherwise than in those respects would have seriously weakened the presentation. The summary above may suffice for those uninterested in the methodology. Survey dates are given lest changes in land use alter or obliterate the features described. The dates also facilitate access to the original field notes and other data in the series of Personal Journals (1973-1995) held by WL.

Acknowledgements: The authors, Dr. William Lonie (WL) and Mr. Frank Newall (FN), have to thank Mrs B.W.Lonie (BWL) for patient companionship on many occasions, and Dr. Piers Dickson (PD), formerly Archaeological Officer to the Scottish Borders Council, for his interest, attendance and advice. Family members Ruth and Tim Jones (RAJ, TRJ) were companions on an important outing. Landowners and tenants in the study areas must be thanked for their interest and tolerance.

The land over which the road was traced belongs variously to Mr. Leon Litchfield of Bowland, Mr. Robert Shirra-Gibb of Ferniehurst farm, Sir David Thomson of Holylee, and Mr. Anthony A. Green of Laidlawstiel. Attempts were made to contact these gentlemen to explain our activities on their land. Where contact was made, reassuring interest was shown. The complexity and duration of the search for the Roman road has tended to delay the courtesy of due thanks to all until the present late date. Tenants and farm managers along the route were contacted whenever possible, and invariably gave interested, if at times sceptical, welcome.

On another similar project, one of the authors (WL) encountered an elderly shepherd in a driving snowstorm (light snow is very revealing of ground features). On our parting, he wished WL good hunting and remarked "We'll ken whae ye are if we find you". Other notable encounters along the way have been with inquisitive horses and cattle, and low-flying aircraft. Being followed by a Harrier jet up a moorland slope is impressive flying but altogether too friendly.

The Caddon Water Roman Road Ground Studies on the Line and Structure

(1) The Roman Road on Scroof Hill

2-11-86, WL BWL: A recreational walk in the Caddon Water valley brought us to Scroof Cottage. A well-made ancient road-terrace, completely overgrown and much eroded, descends southwards at a gradient of about 1:12 (8%) along the steep west slope of Scroof Hill (Lonie, 1989), overlooking the Caddon Water,

from NT401441 to NT404432. The course of this road north-east was later traced over the watershed between the Caddon Water valley and the head of the Nether Shiels Burn, a tributary of the Lugate Water. On this occasion the course of the road was traced southwards but was lost at the sheep-fold some 100 m north-east of Scroof Cottage. The latter is deserted but still habitable.

The terrace on Scroof Hill is uniformly about 10 m across the whole make, and shows in profile variously as a nearly-level terrace at its north end, as a rounded slumped terrace in several middle lengths, and elsewhere as a cambered road-mound with a shallow ditch to the rear (Figures and locations 1a, 1b and 1c). The structure generally offers a road 4.0 m wide. An eroded length near (1b) showed a bank of clay and small stones over-lying a stony layer kerbed with larger stones. No culvert traces were found. The hillside is dry and free from erosion or stream gullies, except as later found at the very head of the terrace, where a minor stream has cut a surprisingly deep gully through the Roman road terrace (see survey 17-4-87, WL BWL; later).

As noted, the Scroof Hill road terrace is of uniformly modest gradient and robust build, providing a 4.0 m wide road surface. The gradient is close to that of farm cart-tracks on side-slopes, locally. Despite these features, the road appears to have borne little traffic and has had no regular vehicular use. Some lengths would now be difficult for vehicles. The overgrowth and slump suggest long abandonment. Memory of known Roman road lengths traversing steep side-slopes, as on Edston Hill near Peebles, as under Durisdeer Roman fortlet on the Well Path, and as on Knock Hill, Ayrshire, suggested that a Roman origin for the road was not impossible. Newall and Lonie (1990 and 1995) discuss Roman roads on steep side-slopes. At this stage, however, it was thought that further evidence, particularly from its northwards course, might make a medieval or even early recent date more likely.

A Section Exposure of the Roman Road on Scroof Hill

27-10-88, WL BWL; 6-11-88, WL: A recent drain cut across the Scroof Hill terrace at NT401440 reveals the terrace and road-mound in good section, as Figure 1d. The drain was noted on the October outing but not sketched on site until November. The ditch is cut at an angle across the terrace. The corrected width scale of the sketch shows the whole road structure to be 13 m wide from terrace back over the outer ditch down-slope. The minor ditch marking the edge of the terrace proper gives a terrace width of 9.0 m. Central on the terrace is a ribbon of stones 3.0 m wide. The 'side walks' are also 3.0 m wide. The mature peat cover over the terrace ground surface, where undisturbed by later road works, is

Fig. (1a, b, c). Road profiles on Screef Hill (looking to the South).

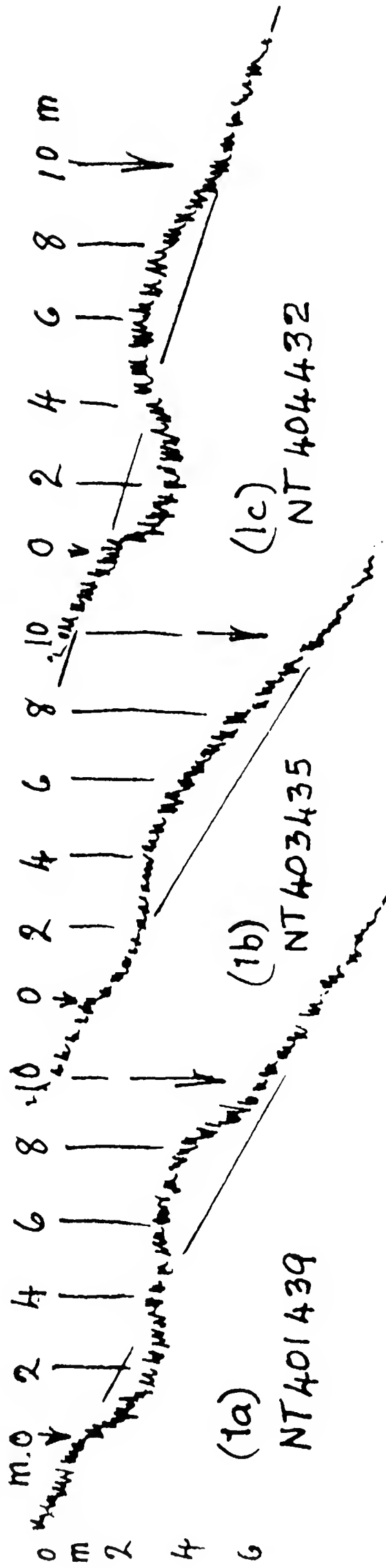
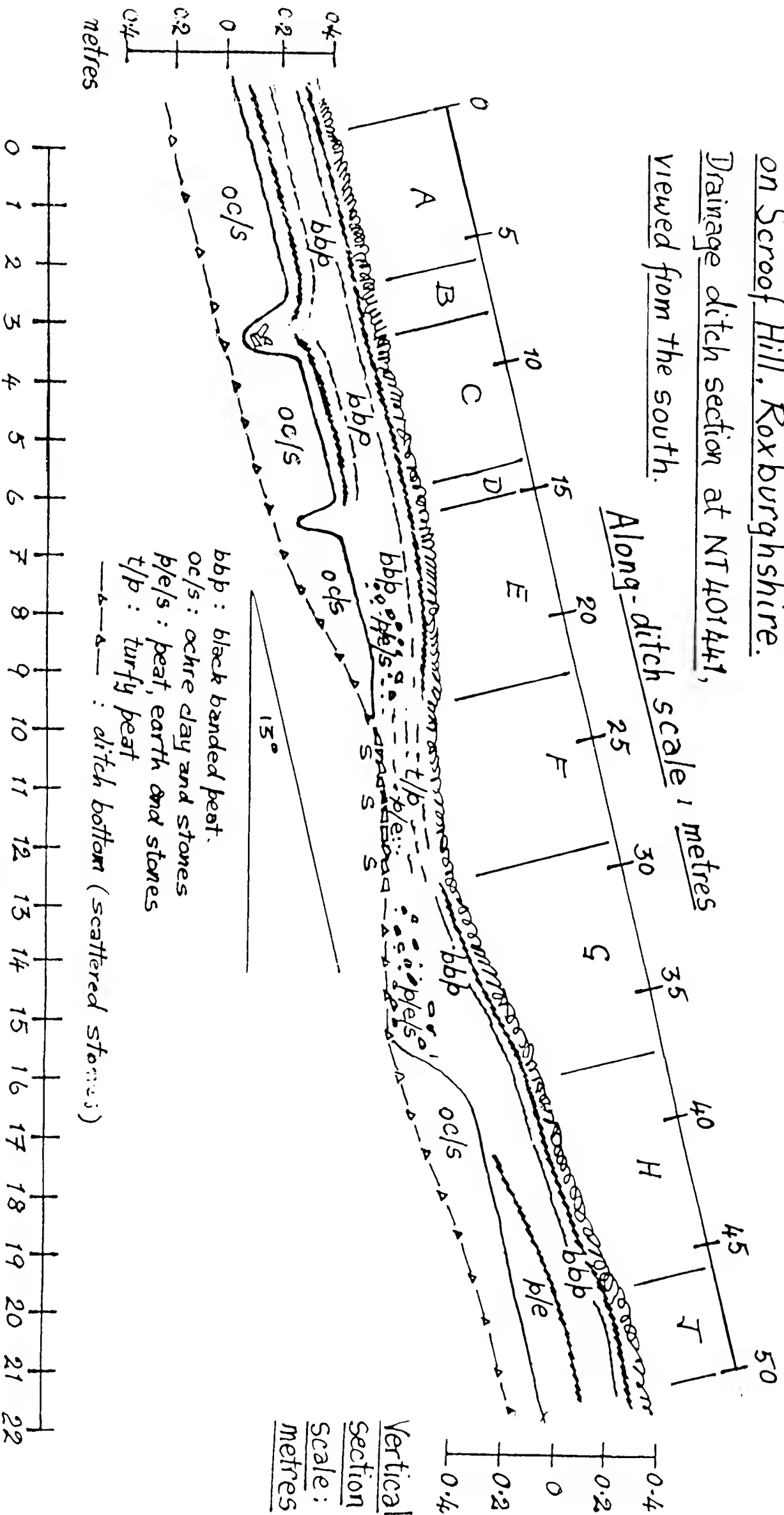


Fig. (1d). Caddon Water Roman road on Scroof Hill, Roxburghshire. Drainage ditch section at NT 401441, viewed from the south.



W. LONIE 11/88

generally 0.3 m deep. Mixed into the lower peat over the 'side walks', to a depth of 0.2 m, is a scatter of stones and earth. Above this mix is a layer of mature peat 0.1 m deep to the front of terrace, 0.2 m deep to the back. Over the central stone ribbon the 0.2 m deep peat layer is lighter in texture. The section may be interpreted as follows:

The terrace, ditches and the central stony ribbon are the original Roman terrace and road-bed. At some later date, when the abandoned Roman road had acquired a considerable layer of peat, the road was 'cast' in approved medieval fashion, i.e. dug out down to the Roman road-bed, though more usually to subsoil. Any medieval use after the road was cast was light, since the exposed road-bed is undisturbed. After medieval abandonment, peat growth continued over the whole structure, with only light later usage, probably only local sheep-droving. Assuming steady peat growth, an assumption not too well supported by the observed peat banding, the ratio of peat depths over the Roman and the later road surfaces suggests that medieval use may have been in the mid-12th century. This result of a crude calculation was not anticipated, but accords well with the prosperity generated by the new Abbeys and the relative peace of the 12th and 13th centuries.

The structure of the Roman Road in the Military Zone of North Britain is exhaustively discussed in Newall and Lonie (1990). In its carefully engineered 9.0 m terrace, stony road-bed, disturbed road-mound and variable peat cover, the structure is entirely compatible with that of a Roman road reused in the high Medieval period.

(2) The Roman Road north of Scroof Hill on Shiels Rig into the Lugate Water valley

17-4-87, WL BWL: The northward course of the Scroof Hill terrace road was sought in the upper Lugate Water valley. From the sheep-pens at the foot of the Calfhope Burn, NT414457, the lower slopes of Calfhope Hill were ascended with an intention to inspect a path-line noticed above the walled enclosures on the hill slope. This intention was abandoned on seeing, to the south across the Burn, a road-scar of bleached grasses on an obvious terrace rising on the north flank of Shiels Rig.

This Shiels Rig terrace was gained at NT413456 where the profile is as Figure 2a. This shows a structure 14.4 m wide over a low, 1.6 m wide, turf bank down-slope and a 1.6 m wide shallow ditch above. A cambered road-mound 4.8 m wide runs centrally. The structure is completely overgrown with grass and heather and

has carried no recent traffic. The low turf bank down-slope of the road-mound was later found to belong to a field enclosure post-dating the road.

The profile at NT412455 (Figure 2b) lacks the lower bank. The structure is 11.2 m overall from down-slope terrace foot to the terrace back. The terrace is not level but clearly ran out at the point noted. The low turf bank of Figure 2a was noted to have diverged from the road structure and to run some 30 m down-slope.

Since the turf dyke does not cross the road structure, road and enclosures may have been in contemporary use. However, as the road does not run to accommodate the dyke in any way, the road would appear to have predated the enclosures. The enclosed land is entirely rough pasture, now heather-grown at this altitude, about 300 m. Such enclosure is an 18th/19th century activity in Scotland.

For some 25 m about NT411454 the road mound is very pronounced, as Figure 2c, as the road maintains its line across a steeper, wetter slope liable to slip. The front edge of the terrace has slumped, though the overall width is maintained. The ditch to the terrace back is pronounced at this point. No culvert remains were noted. At NT410453, location (2d), the structure profile, not shown, is nearly the same as Figure 2b.

On the approach to the crest of Shiels Rig at NT409452 the visible structure becomes a simple depression 10.0 m to 11.0 m wide, as Figure 2e, partially grass-grown, in the peat and heather overgrowth of the ridge crest. On the ridge crest itself, at NT408451, the structure is almost entirely overgrown with heather, as Figure 2f, and tracing it was complicated by more recent tracks climbing the Rig towards Deaf Heights and crossing the ancient road line.

At NT407450 the road re-emerges clearly as a centre-mounded terrace 11.2 m wide, as at (2b). A complication here is a series of linear mounds and ditches immediately down-slope of, and parallel to, the road proper, extending some 50 m along the slope. These mounds are at distances apart of about 10.0 m, as Figure 2g, and it was initially difficult to determine which was the Roman road proper. Their purpose is not obviously drainage, although the ditch upslope of one bank appears to have been deepened at some time; nor clearly agricultural, e.g. cultivation rigs, unlikely at the altitude, 410 m.

Other Roman roads show short stretches of multiple road-mounds or considerable expansions. These road features are discussed and exemplified in Newall and Lonie (1990), already cited. An obvious example, though requiring proof by excavation, is to be found on Dere Street just north of Chew Green near

Brownhart Roman signal station; another on the Glenwhern Roman road as it shoulders Minny E' Hill; and again on the Lune valley Roman road as it crests the westerly ridge of White Hill in the Forest of Bowland: this last is a large flat expansion (WL, Personal Journal). Old roads other than Roman show similar features, as the Minch Moor road at its crest near the Cheese Well, and at both foot and head of the heroic rising road length on the north slopes of Craig Hill, about NT325162.

For the carters of the high horse era the expansions would allow teams to draw aside to recover their wind, or provide wagon parking to facilitate trace-horse working by wagon convoys, or simply to permit passing on single-track roads. Military units, foot or horse, may have reassembled at these points. Multiple road mounds probably indicate foot and horse traffic, flat expansions cart or wagon traffic.

At the multiple roads point on Shiels Rig, secondary road use was also evident, and southwards up the east flank of the Rig the Roman road is twinned with a later track, generally some 50 m upslope. This later track is narrower, more sinuous, and in recent use by vehicles for land management purposes. This later track rises from the Lugate Water along the south-east slope of Shiels Rig, where there is a line of shooting butts: as noted, the Roman road rises at first along the north-west slope of the Rig.

On the steeper side-slope to the south-west of the multiple roads point, the Roman road is narrower overall, 10.0 m typically as Figure 2h, at NT404447, but retains its character of a road-mound on a terrace. There is an exposure of a possible agger kerbstone. The route on this road stretch is over rough pasture interspersed with heather patches. The shallow hollow behind the road-mound is in occasional current use by light tractors, probably motor tricycles, used hereabouts for shepherding and game-keeping activities.

At NT403446, at a headwater of the Nether Sheils Burn, the reason for the twinned ancient and later roads became clear. The Roman road is broken by a chasm washed-out some 12 m deep and 40 m wide in the glacial brash of which the hillside is composed. Following the initial broaching of the roadway, the burn has cut back this deep gully for some 100 m upslope. The secondary track runs immediately upslope of the gully and must post-date it. On the north-east side of the gully the truncated Roman road terrace broadens markedly, perhaps indicating that the crossing had given trouble while in primary use.

Fig. (2a) Road profile on Shiels Rig.

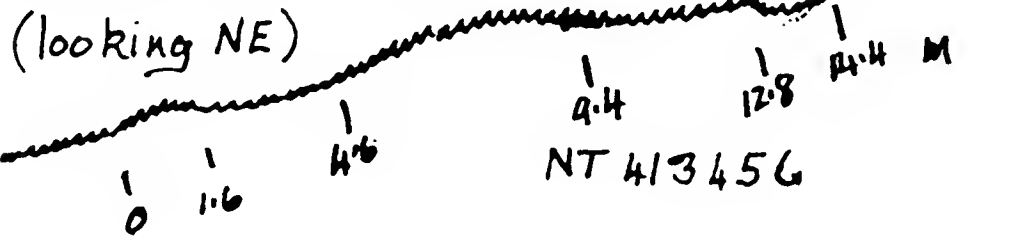


Fig. (2b) Shiels Rig. NT 412455

(looking NE)

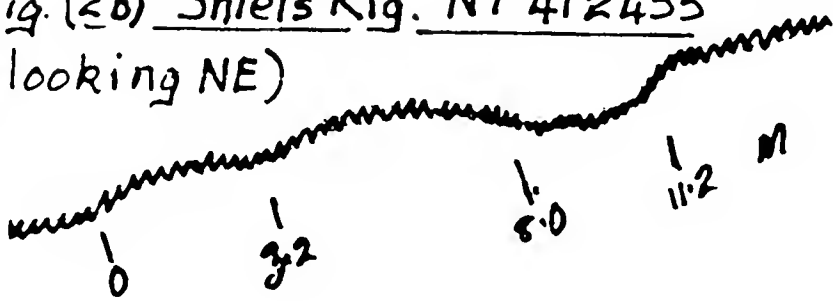


Fig. (2c) Shiels Rig. NT 411454

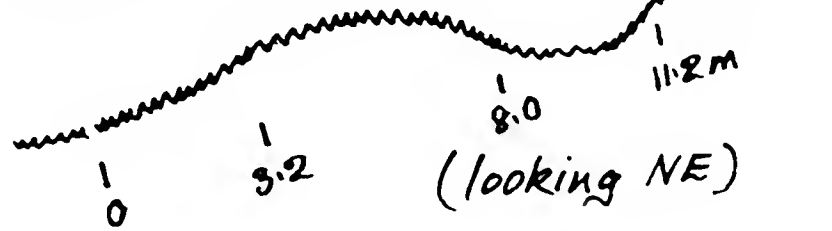


Fig. (2e) Shiels Rig. NT 409452.

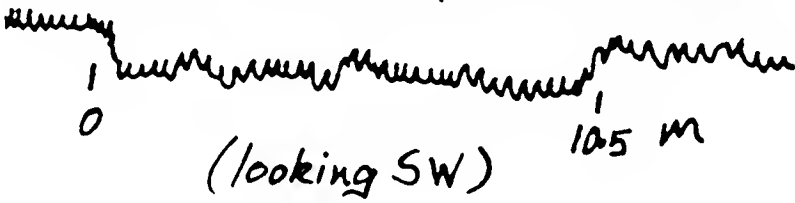


Fig. (2f) Shiels Rig. NT 408451

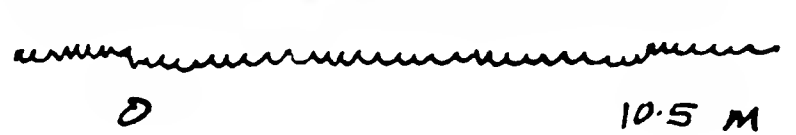


Fig. (2g) Shiels Rig: Multiple Roads. NT 407450

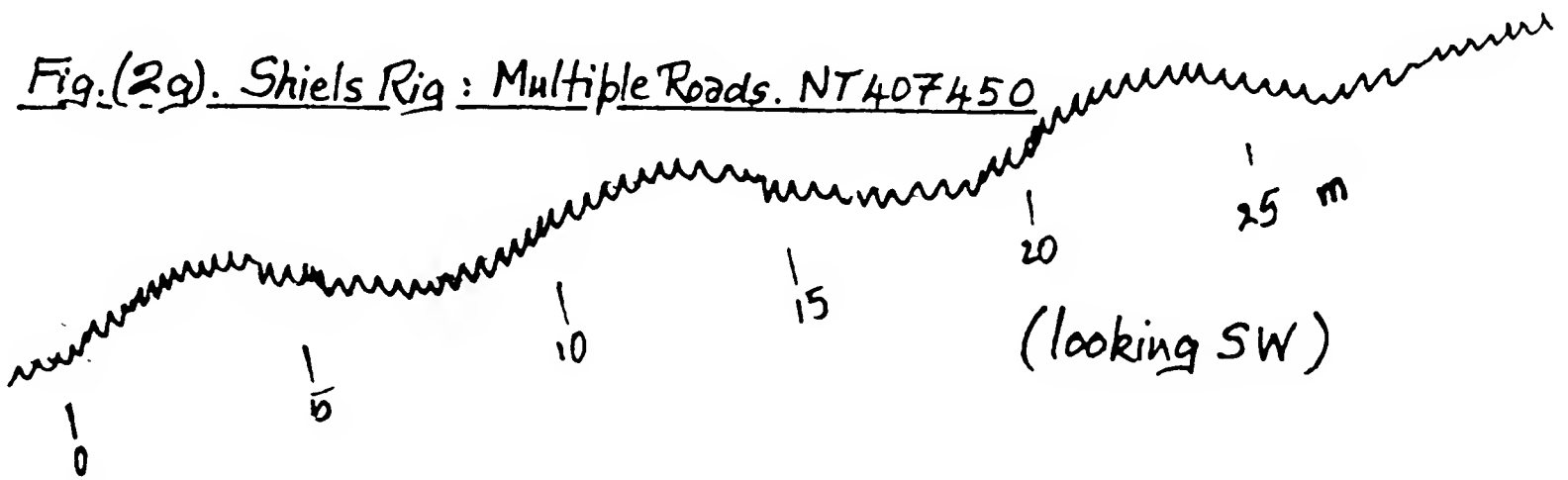
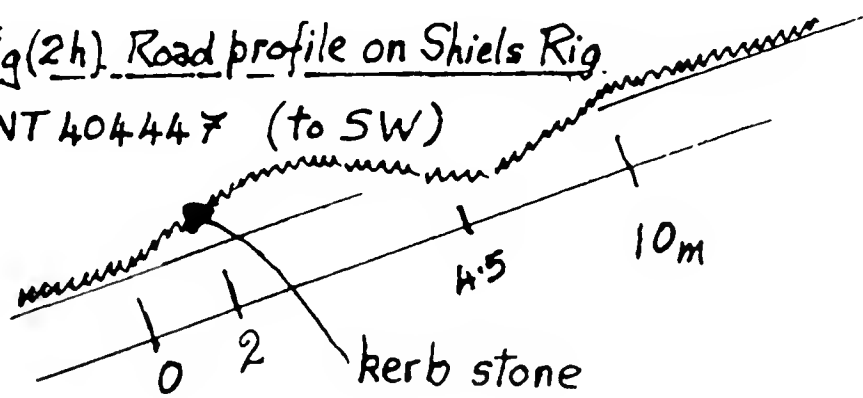


Fig. (2h) Road profile on Shiels Rig.

NT 404447 (to SW)



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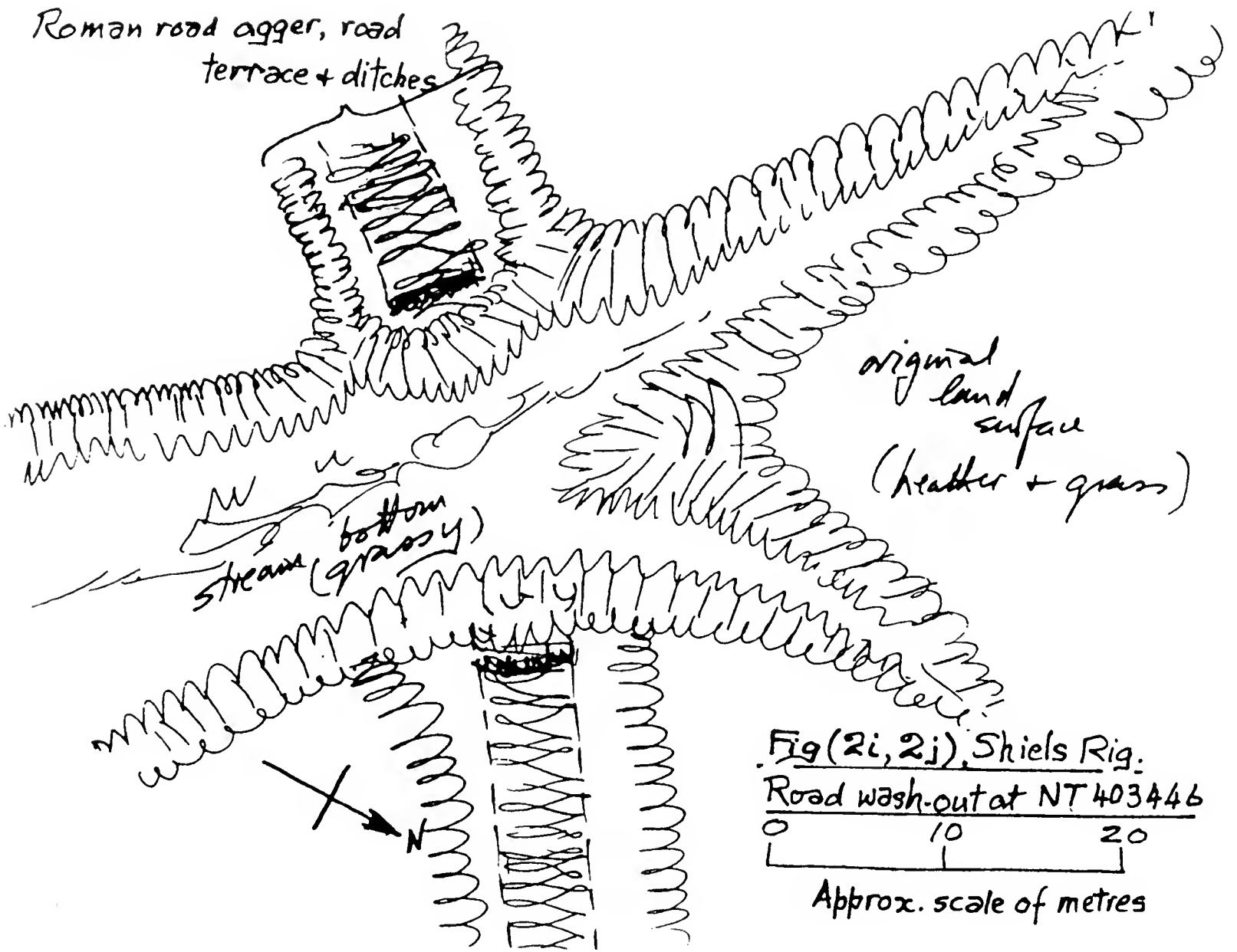


Fig. (2j). Shiels Rig. NT 403466
Road section to SW of wash-out chasm.

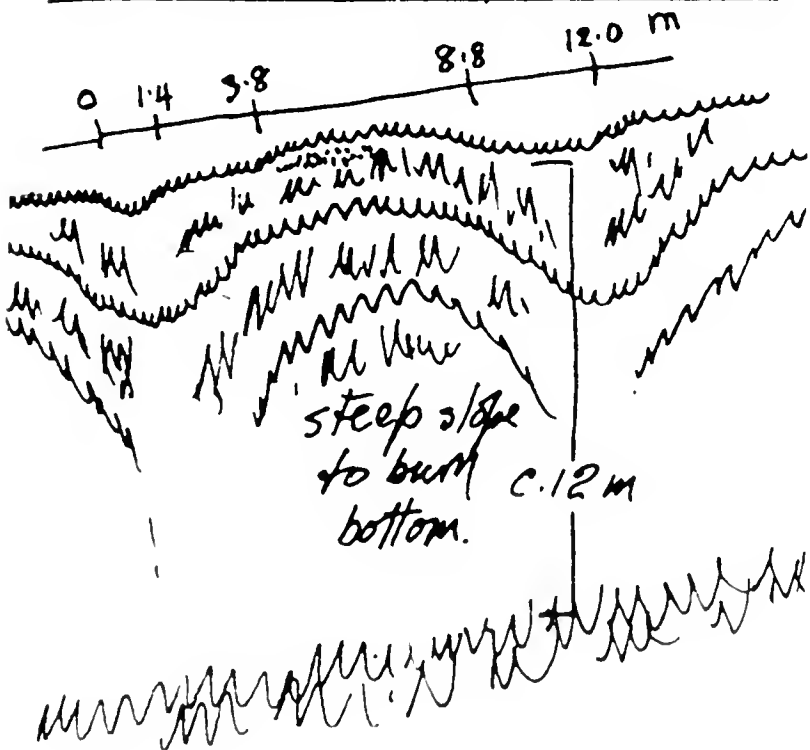
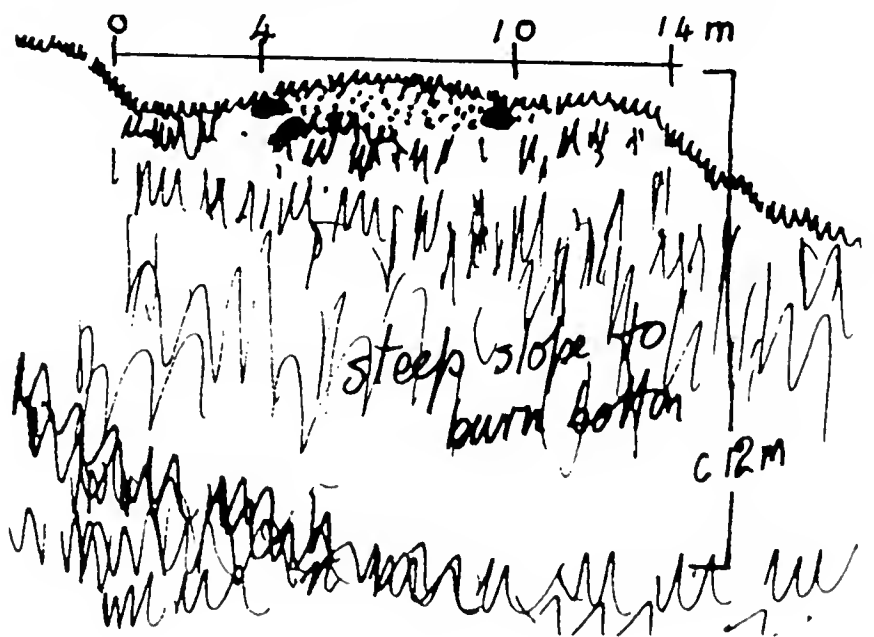


Fig. (2i). Shiels Rig. NT 403466
Road section to NE of wash-out chasm



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Figures 2i and 2j show the sections revealed to the north-east and south-west of the chasm respectively. In the section (2i) the road-mound is composed of small stones in loose, red, sandy clay. On each side of the mound large stones, 0.3 m across, are exposed, and are probably kerbstones. A single large stone on the sub-soil below the mound may represent a rather perfunctory roadbed. No gravel road metal was found at the top of the mound section. In section (2j) a road-mound of small stones and sandy clay is again revealed. Rank grass growth on the steep sides and bottom of the gully concealed details of ditch sections and any fallen stonework. Despite the absence of classical road-bed and gravel road metal, there can be little doubt that the structure is indeed a Roman road.

South-west beyond this great gully the road continues as a broad terrace and agger for some 300 m to NT402444, location (2k) of the survey, where its further course was lost in broken ground and heavy heather growth. On cresting the saddle between Deaf Heights and Scroof Hill at the recent fence gate at NT401443 it was clear that the Roman road did not run on that line. Search in the immediate neighbourhood of the fence gate failed to relocate the road structure, but from there the northern end of the Scroof Hill road terrace (survey 2-11-86, WL BWL; earlier) is clearly visible at NT401441 (2m) as a notch in the hill slope, despite heavy heather cover.

Near this point (2m) at the head of the Scroof Hill terrace the road had to cross the surprisingly deep gully of a minor stream, and near this crossing had to turn from its north-north-west course towards the north-east. At the burn gully, Figure 2m, a blaze of bleached grass in the gully bottom and a steep ramp rising diagonally north-east seemed to indicate the forward course of the road, but this could not be located by local search.

To give a more distant view of the road lines, the north-west ridge of Scroof Hill was climbed for about 60 m. From this vantage point, and in the slanting sun of late afternoon, two well-spaced parallel shadow lines were visible at (2o) in the deep heather directed from the lost end of the Shiels Hill road terrace towards the head of the Scroof Hill terrace.

On descending again to the burn crossing at (2m) the ground was re-examined in the direction of the shadow lines. It became clear that from the burn crossing the Roman road continues on line for some 50 m, then turns from near north to north-north-east in the direction of the shadow lines as sketched (Figure 2m). The roadway shows in deep heather as a shallow depression some 12 m wide, with a low central mound, that fades some 50 m further on. This road profile, once appreciated, shows clearly at the top of the north bank of the burn gully and establishes the onward line of the Roman road from the Scroof Hill terrace. At the

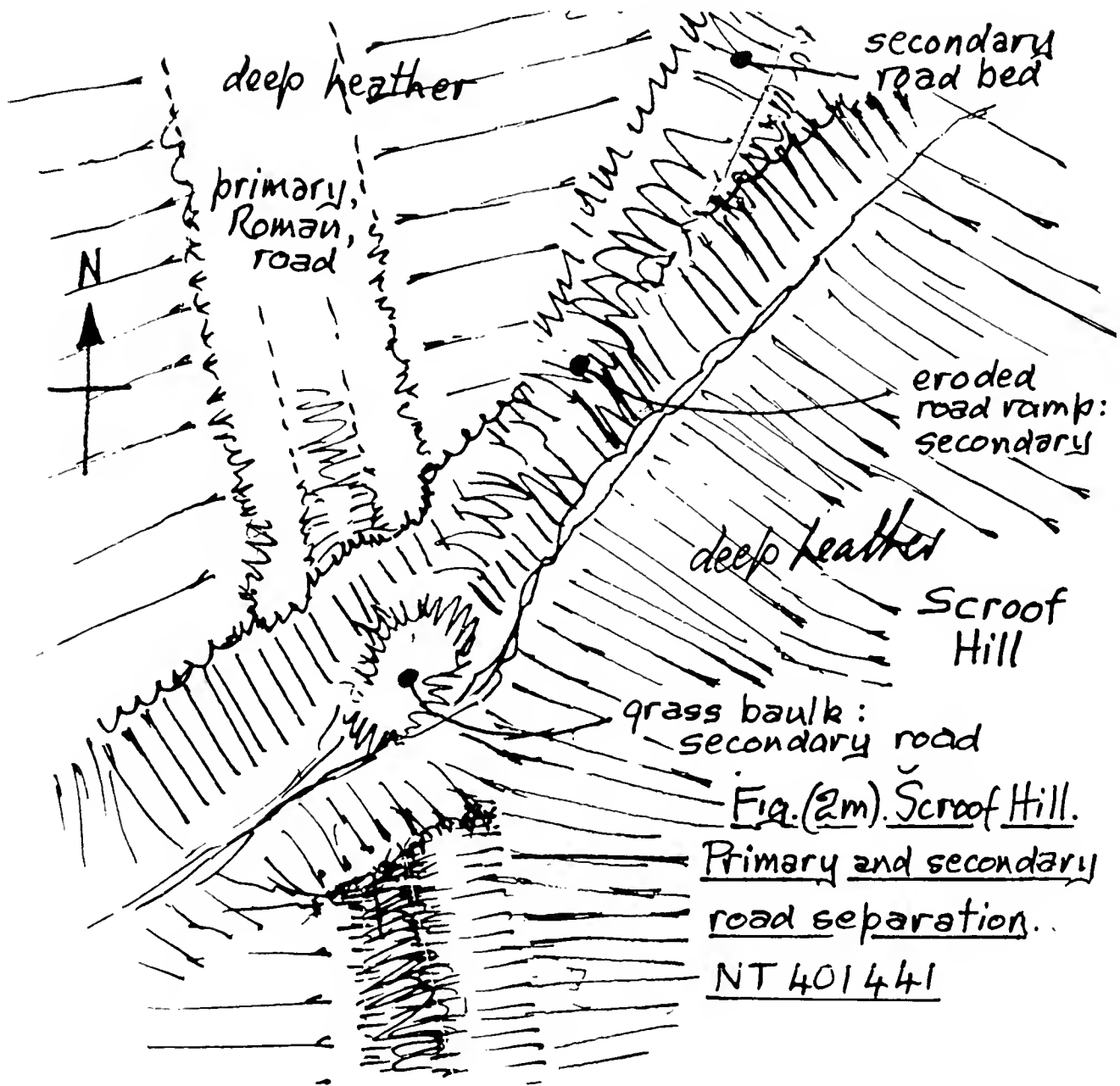


Fig. (2n). Shiels Rig.
NT 401442

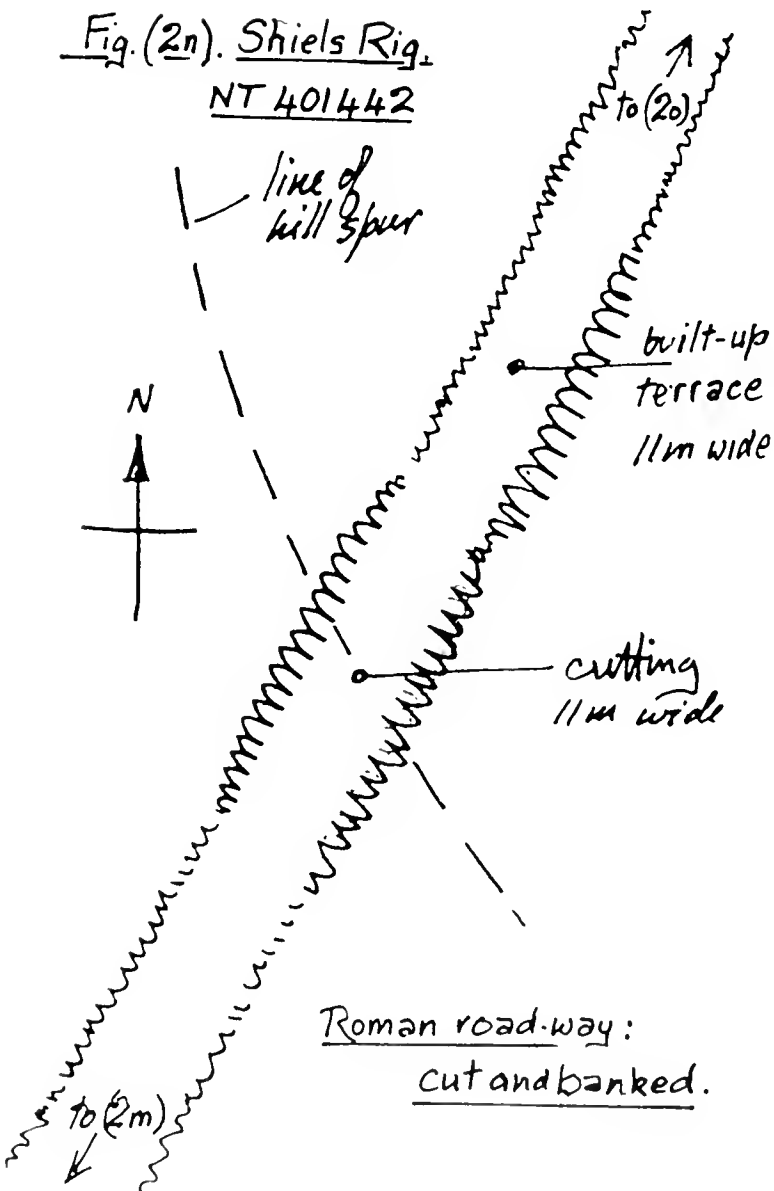
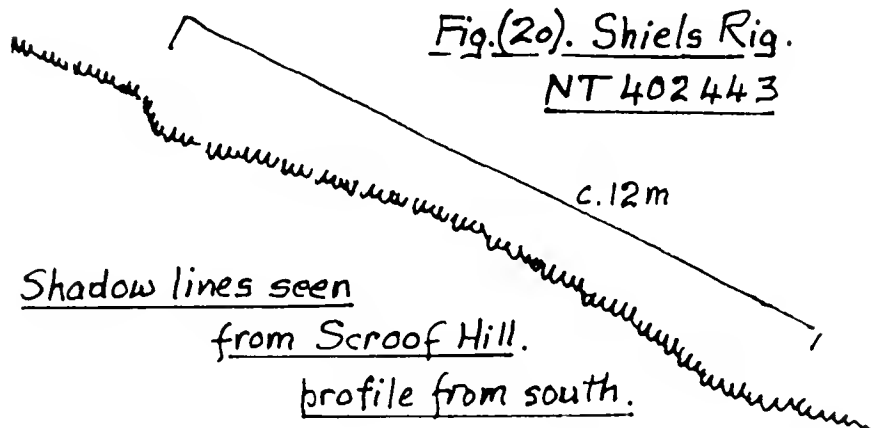


Fig. (2o). Shiels Rig.
NT 402443



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burn crossing (2m) ancient and complete washout of the Roman road has taken place. The diagonal crossing and its associated road are secondary features for which a medieval date is suggested below. The two phases of road use have been separated by the period of torrential rain that created the burn gully.

Lest this concern for the exact course of the road seems obsessive, it was considered important to link the Shiels Rig and Scroof Hill road lengths, in order to establish beyond doubt the Roman nature of the Scroof Hill terrace and the continuity of the road structure.

The road line thus re-established was followed to the north-north-east to NT401442 (Figure 2n), where the road is cut through a minor hill spur to the full 11.0 m width of the roadway terrace. The cutting material was used to embank the road across an adjacent dip in the hill-slope, again to the full 11.0 m width, thus preserving the nearly level grading of the road along this length, as Figure 2n.

The cutting structure is heavily overgrown with heather. The embanked roadway is partly grass-grown, reflecting the better-drained bank material. On appropriate terrain such cutting and embanking is very typical of Roman road building, to preserve a straight line and uniform gradient, and it is of interest to find this notable example on the Caddon Water road.

Continuing the search northwards, the parallel shadow-lines seen from Scroof Hill were found, at NT402443, to be the back and front of a cambered but very sloping or slumped terrace some 12.0 m wide, as Figure 2o. About this location the road is deeply covered with heather. Continuing northwards on the same line is a clear centre-mounded terrace which leads in 50 m to location (2k) where the road was previously 'lost'. As excuse for this previous loss, the road angles unexpectedly from north-north-east to north-east in deep heather at this point.

It was previously noted that the Scroof Hill road terrace had borne little or no wheeled traffic and was, for considerable lengths, unsuitable for such traffic. Again, between locations (2m) and (2k) there is no sign of use by such traffic. On the steep side-slope about location (2o) the road can scarcely have taken wheeled traffic. The secondary roads on the Scroof Hill terrace and on Shiels Rig were not traced to a junction.

Both the gully at the head of the Scroof Hill terrace and the washout chasm on Shiels Rig give evidence of deluge. As we shall see, the Caddon Water has also, in later Roman or post-Roman times, obliterated Roman road works. The implications of these observations will be discussed.

A possible Roman Signal Station on Shiels Rig

The road on Shiels Rig was retraced to the multiple roads stretch, (2g). The feature bears some resemblance to the multiple roads length on Dere Street to the north of Chew Green and close to Brownhart Roman signal station. With the possibility of a signal-station in mind, the crest of Shiels Rig was followed north-east towards the 'cairn' marked on the 2cm:1km Ordnance Survey map at NT409452. It was soon realised that that underfoot was a low linear road-mound some 4.0 m wide, marked by close-cropped grass amongst the surrounding coarse grass and heather. The grassy mound on which the marked cairn is set is unremarkable. The cairn itself, a shepherd's guide-cairn, is made from stones some 0.3 m across prised from immediately around, where many earth-fast stones still show. Some 50 m due east of the cairn, however, the grassy platform at NT410452 does show interesting structural features, as Figure 2p.

The structure is circular, or nearly so, and comprises a penannular shallow depression around a low central mound. The structure is 11.0 to 11.5 m in diameter over the 'ditch', 1.0 to 1.5 m wide. The outer edge of the ditch is poorly defined over arcs on the down-slopes to either side of the Rig crest, as might be expected, and is broken through entirely for some 4.0 m on the south-east by a shallow disturbance. The 'entrance' to the structure is a well-defined break, c. 2.0 m wide, in the ditch to the west-south-west, directed back along the main ridge and the road-mound thereon. On the central mound are three small settings of stones showing through the grass cover.

These stones are in groups of three or four, each setting about 0.4 m across. The settings are at three corners of a square of 2.0 m side. If this arrangement has structural significance the position of the fourth setting, completing the square, would be in the disturbance of the south-east sector of the mound. The stones of the settings are not earth-fast, i.e. they move to a gentle push, but no attempt was made to lift them. Probing with a trowel point within the 'square' did not detect any further stones near the surface. On the ground, as in the sketch, the whole structure is suggestive of a Roman signal station base.

The overall diameter of 11.5 m is small compared with the average 21 m overall diameter of the Gask Ridge watch towers (Hanson, 1987), but is only slightly smaller than that of the Eildon North Hill signal station base of 12.2 m (Steer and Feachem, 1954; R.C.A.M.S., 1956), a diameter shared with the high-mounded signal station base on Craik Cross summit (St. Joseph, 1947). *En passant*, the two ring-ditched earthen 'cairns' on Blackhall Hill (R.C.A.M.S., 1956) beside Dere Street between Chew Green and Pennymuir Roman sites have the

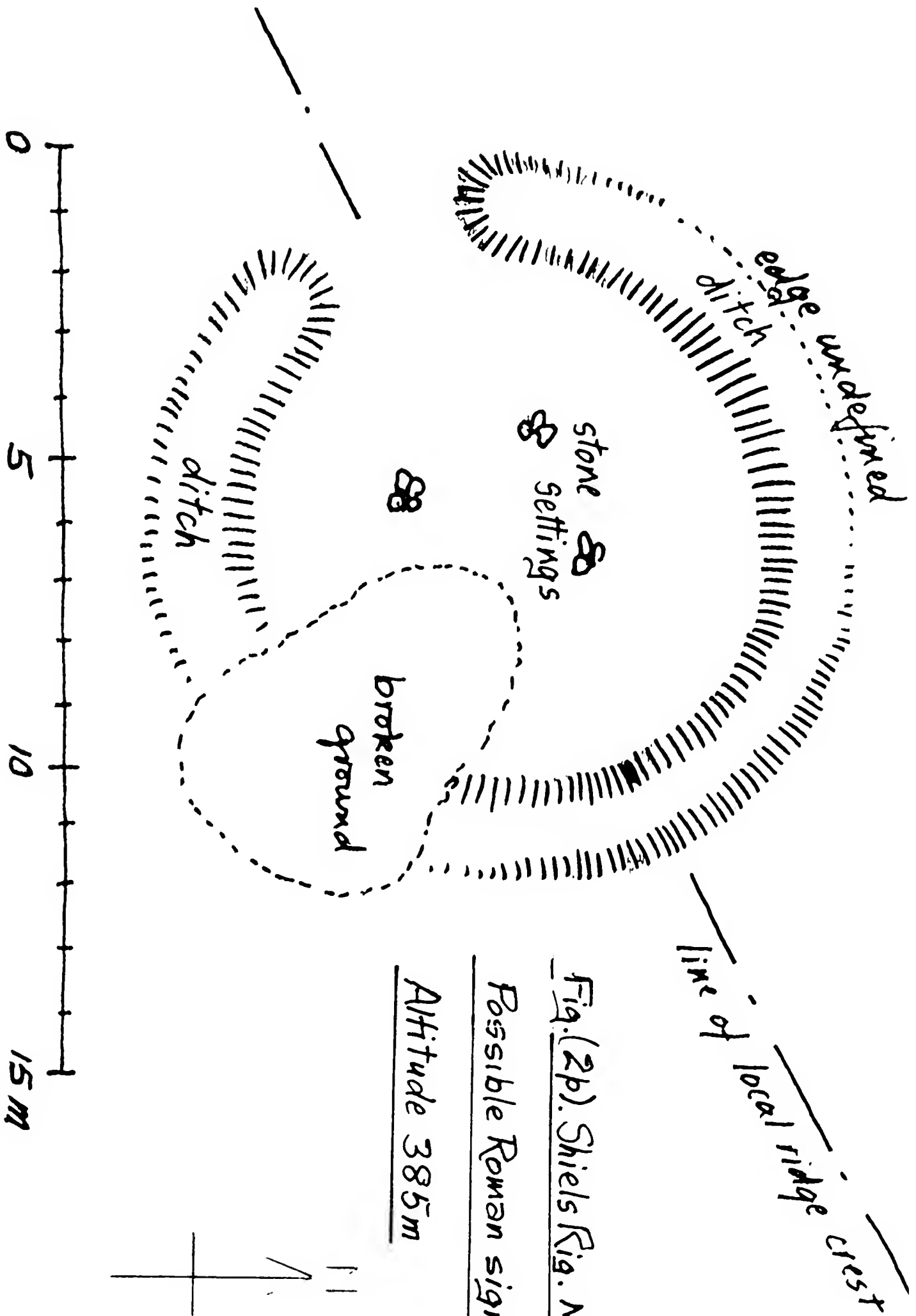


Fig. (2b). Shields Rig. NT410452

Possible Roman signal station

Altitude 385m

same profile and diameter as that on Craik summit (WL, Personal Journal). These 'cairns' are in line of sight with both Pennymuir camps and Brownhart fortlet. The diameter of 11.5 m is significantly larger than the c. 8.0 m of the possible signal station base on Whitton Edge, again by Dere Street (R.C.A.M.S., 1956). The Beattock Summit signal station base is 11.0 m in diameter over 1.9 m ditches (Maxwell, 1976). The tower was set on a stone and clay platform 3.0 m square. Drumnagair signal station, 4.0 km south-west of Laurencekirk, is 11.7 m over its ditch.

If the Shiels Rig structure is indeed a signal station base, the stone settings may represent the post-hole blocking-stones for the timber uprights of a tower. At 2.0 m square the tower base would be only half the size, linearly, of the Gask Ridge tower bases, and only a quarter of the area. Similarly small tower bases occur or may be presumed at the Whitton Edge, Beattock Summit and Drumnagair sites noted above.

As a signal station, the Shiels Hill site enjoys remarkably long views from its altitude of 380 m. Locally it commands the whole 2.0 km length of the Roman road from the Scoof Hill col into the Lugate Water valley and presumably the course of the road onwards north-east. Unfortunately for the road tracing study, these views include much of the distant horizon from north to south-east and some 150 square kilometres of upland. Of predictive interest is the line of sight to Hartside Hill, 10 km distant to the north-north-east and only 2.0 km and 150 m uphill from Channelkirk Roman camp on Dere Street. Ground search of the hill has proved negative for possible signal station sites. Search more generally in that direction has also been negative for Roman roads, but the search area is not exhausted.

In summary, the road-mound on a broad terrace traced on Scoof Hill and Shiels Rig is very probably Roman in origin. It was of high interest to trace the extensions of this isolated road-length both northwards and southwards, and ground studies were continued whenever time, weather and land use permitted.

Postscript

27-01-01, WL; 02-02-01, WL: Surveys made in breaks in the atrocious weather of the winter of 2000/2001, have located an ancient, possibly Roman, road issuing from the north end of Channelkirk camp to run south-west through Kirktonhill and Hartside farmlands towards Clints. Though further claim is presently not justified, this route is in good line for Compass Slack. Restrictions on access, attendant on

the foot and mouth disease outbreak elsewhere than in Tweeddale, in February 2001, are currently still in force in August 2001.

(3) Possible routes of the Caddon Water Roman Road north-eastwards of Shiels Rig

26-4-87, WL BWL: This walk took us from Stagehall in the Gala Water valley, by Ewes Castle in the Lugate Water valley, then by Shiels Rig to Deaf Heights, returning by Calhope Hill, Ewes Hill and Cottie Hill. The walk, though pleasant in the extreme, failed to discover any extension of the Roman Road on Shiels Rig north-east beyond point (3a), NT414457, where it runs, on line, under the dry-metalled service road to the sheepfold there. The metalled road curves north along the foot of Calhope Hill for some 500 m to the fords at Compass Slack to Nether Shiels farm, as marked on the 4cm:1km Ordnance Survey map.

On our descent from Calhope Hill, the Roman road line was clearly visible on its way across the Lugate Water valley bottom at the foot of Shiels Rig, and as a vegetation mark across the pastureland to the crossing of the Calhope Burn, (3a), just upstream of the sheepfold on the left bank. From Ewes Hill summit the high end-on view of Shiels Rig showed the full-width grass blaze of the Roman road terrace tapering off into a vegetation mark, still at full width, extending well into the pastureland. Important for sequencing, the enclosure boundary, a slumped turf dyke, could be seen to ride over the Roman road-line without a break, at the point of vegetation change. The enclosure, obviously old, say 18th century, either ended the use of the road or recognised its disuse.

In retrospect, despite failure in its main objective, the outing made clear that the Roman road must have turned northwards on the Lugate Water valley floor. The steep west face of Ewes Hill blocks any direct line north-east. The road probably crossed the Lugate Water in the vicinity of Compass Slack and continued either northwards by the Thrashie Burn valley (3b) into The Glen by the ruins of Howliston Castle, or north-eastwards by the minor burn valley (3c) between Ewes Hill and Symington Hill. Both routes lead into and perhaps across the Gala Water valley. Neither Howliston Castle nor Ewes Castle is dated for century of building in *Castles of Scotland* (Macgregor and Harris, 1975) nor in the R.C.A.H.M.S. Inventory.

27-10-88, WL BWL: From Caddonhead Farm, gained on this occasion by car, the road to Scroof Cottage and the Scroof Hill Roman terrace took us on to Deaf Heights and over Caddon Head to the summit of Windlestraw Law, for lunch in brilliant sun. The descent was by Red Scar Law, Broomylees Rig and the valley road back to Caddonhead Farm.

At Scroof Cottage it was noted that the final descent of the broad Roman road terrace from Scroof Hill is in a wide loop eastwards into the mouth of the Scroof Burn valley. There the road turns at the sheep-fold at NT405431 to run south west for 50 m over the Scroof Burn and clearly under Scroof Cottage (4a). Roman road traces could not be found in the field to the south-west of the cottage, nor on the main valley bottom on-line. This failure to discover Roman road traces on the Caddon Water valley floor was a problem not solved until, as accounted below, the road terrace was found again on the high right bank of the Caddon Water some 300 m to the south-west.

The track from Lugate farm, 4.0 km to the north-east, descends the right bank of the Scroof Burn. It overlies the Roman road briefly and shares the same crossing of the Burn, obliterating any Roman features there. A narrow (2.5 m) fording place of the Caddon Water at NT403430 was probably taken by this track to gain the main valley road on the right bank of the Caddon Water.

Photoslide S861121, (Figure 4a), taken on 2-11-86 looking north-west from Dunlee Hill, NT410429, confirms the Roman road to loop eastwards into the Scroof Burn valley. Its further course is obscured by heather growth and the overlying track from the Lugate valley.

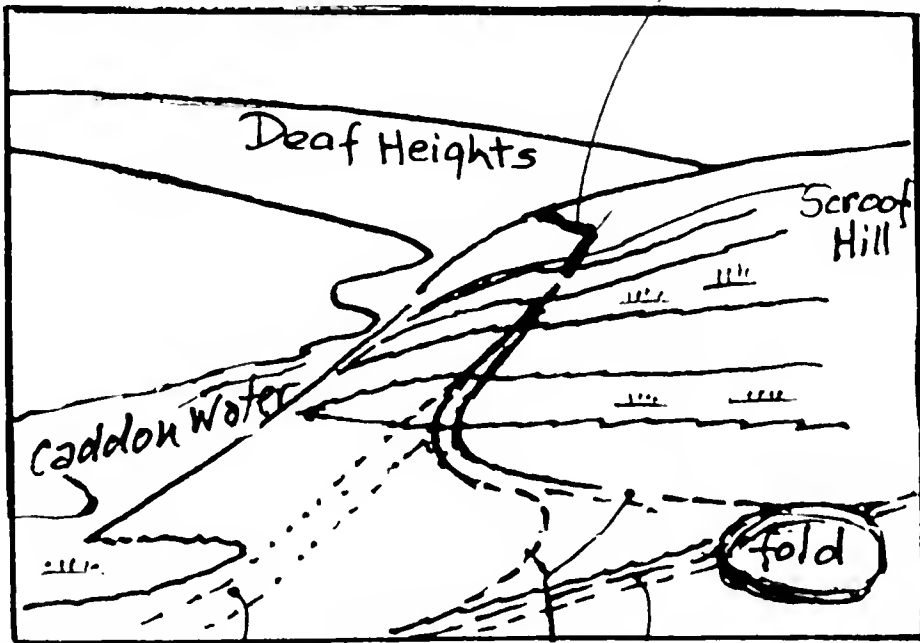
The secondary road on the Scroof Hill Roman terrace, the old cart-way or pack-horse trail adduced to be of medieval date, follows the Roman terrace eastwards for some 100 m then forks as shortcuts descending to the track from the Lugate Valley. The broad blaze of bleached grass, clear on the slide, descending directly south-south-west from the Scroof Hill terrace is characteristic of a droving line: the staling and dunging concentrated on the route alters the soil chemistry in favour of grass rather than heather, even after more than a hundred years of disuse.

This junction of two old tracks suggests they were contemporary and that the track from the Lugate Valley and Ewes Castle was in use as early as the 12th century. Such early use might well justify the appellation Lugate (Lugh, Llud, q- and p-Celtic gods) and associate Ewes Castle, otherwise undated, with the 12th and 13th century sheep-rearing by the Abbeys. There is a scatter of some seven or eight small ruined towers, un-dated, in the valleys around which merit historical study. The name Lugate is itself archaic, and implies a road already old beyond memory at its naming. The mention above of a pack-horse trail faces the realities of transport in both the Roman and medieval periods. The hill-name Collie Law close by is a rare distinction for a dog, even a sheepdog, and may indicate an equally early origin of the breed. All this is another tale.

Fig. (4a). Photoslide 5861121

Roman road and tracks above Scroof cottage.

Roman road.



Scroof cottage

droving blaze.

Roman road and track to Lugate W. short-cut tracks.

W 23-2-01

(4) The Caddon Water Roman Road southwards of Scroof Hill

30-6-88, WL: An intention to reach Scroof Cottage was curtailed at the moor-gate at NT413398 on the saddle between Black Law and Craig Head, since it was felt possible that the Roman road came southwards in that direction. Extensive search on both ridges and summits proved negative for possible Roman roads. On Craig Head, road terraces were indeed noted but these appeared to be associated with woodland management.

Broomylees Rig foot to Stoney Knowe

At the foot of Broomylees Rig, an old road terrace was found, 9.0 m wide and entirely overgrown. The terrace runs due south parallel to, but some 30 m upslope of, the present valley road. This road-way was traced for some 250 m from NT403428 (4b) to NT403426 (4c). At its south end the terrace appeared to converge with the valley road in present use. At its north end the terrace turns towards Scroof Cottage but is truncated by an abrupt drop of 3.0 m to the valley floor. The Roman nature of the terrace was later established.

The branch road to Scroof and the valley service road in current use here run on the valley floor, which is sensibly flat for the 300 m north-north-east diagonally across the valley to Scroof. It is quite apparent that at some time between the construction of the Roman road and the making of the valley roads there has been fluvial erosion on a massive scale.

The catchment area above Scroof is about 5.0 square kilometres, 500 hectares. A 25 cm (10 inches) fall of rain in 24 hours, a deluge indeed, would deliver 1,250,000 cubic metres (tonnes) into the Caddon Water at the rate of 14.5 cubic metres per second. Erosion of glacial soil (mixed clay, sand, gravel and stones) is held to occur at a flow velocity of about 1.0 metre per second, 2.25 mph, a normal walking pace (Read and Watson, 1962). To achieve this velocity, the deluge flow suggested would have to be confined to a stream cross-section of 14.5 sq.m, say 3.0 m wide by 4.8 m deep. This flow would clearly overspill the present bed of the Caddon Water and flood the valley bottom. The Caddon Water valley bottom is now some 100 m wide and so would flood to a depth of 0.145 m, nearly 6.0 inches, an erosive scenario. Heavy snow and a rapid thaw might well have contributed to the stream flow. While this treatment of stream flooding and erosion ignores many of the niceties, even fundamentals, of hydrology, it suggests the order of events.

Further south, and some 100 m to the west of the valley service road, two stony fords were noted, those of the Cauld Cleuch at NT400421 (4d), and of the Hersie Cleuch at NT399417 (4e). The associated ancient road (4f) was noted, from a distance, to run on for some 400 m above Caddonhead Farm. Terrace traces at a similar altitude, 300 m, were seen to contour southwards on the Maiden Rig towards the Oak Burn valley. This terrace and ford system did not then seem to align with the 9.0 m wide terrace opposite Scroof.

6-11-88, WL: Broomylees Rig, the easterly spur of Red Scar Law, was again searched for road terraces which might continue the old road terrace found along the foot of the Rig; no terraces were found. The 'cairn' at NT399427 is only 1.0 m high and resembles a small loading platform. It is probably associated with shooting butts nearby. In retrospect, this was a rather pointless diversion preceding the study of the Scroof Hill terrace ditch section described earlier.

On the retreat from Scroof Hill through bitter cold, the old road terrace along the toe of Broomylees Rig was re-examined. It was found that the terrace does not, as first appeared, fully converge with the valley service road at (4c), but diverges again to take a rising line some 50 to 100 m upslope, i.e. west, of the service road. This new line leads on to the old road over the Cauld Cleuch and Hersie Cleuch fords noted previously, thus joining the two road lengths. This finding gave much needed fresh encouragement in the ground search.

Oak Burn to Holylee by the col of Seathope Law and Stony Knowe

10-1-88, WL BWL: This outing was a fine walk of 9.0 km from Craig Head ridge by Black Law, Stony Knowe, Seathope Law (542 m), Maiden Law, and by the Caddon Water back to Craig Head. Between Stony Knowe and Seathope Law at NT392400 (4g) a track crosses the col, running south-west from the head of the Oak Burn on to the west spur of Stony Knowe. This spur descends to Holylee House and farm in the River Tweed valley.

The track on the col was noted to have two phases, a grass track and a tractor track. The tractor track holds north-west along the col on to Seathope Law. The grass track at the col is noted in my Journal as being no more than a shallow way some 2.0 m wide between spread peat banks formed in clearing the roadway. It is noted that no other old road crossed the col or the route of the walk, though this was over Maiden Law to the Caddon Water and should have crossed the old road fording the Cauld and Hersie Cleuchs noted earlier.

These findings are reported as a warning not to come to premature conclusions, since this 'shallow way' eventually proved to be the sought-after Roman road. Its dismissal led to several ill-directed searches, and the present embarrassment.

13-11-88, WL BWL RAJ TRJ: We walked to Stony Knowe summit (504 m) by way of Southerly Nick from the Thornylee Forest car-park at NT404365, and descended to the Tweed valley road, A72, at Holylea. The day was bright and clear with a cold wind.

On the descent north-west from Stony Knowe we crossed a broad grass-grown terrace with hollow-way use. This road terrace crosses the col at the head of the Holylea Burn at NT391398 (4h). Surprise is expressed in WL's Journal that this terrace was not noted on the outing of 10-1-88, recorded above. It must have been missed amongst several natural terraces following parallel courses: indeed much of the road runs on a natural terrace.

The road terrace was followed for some 600 m on its descent from the col, curving southwards to the field wall at NT389393 (4i), where it is lost in cultivated ground. The structure is generally 10.0 m wide and in its lower course is centrally mounded. The tractor track in present use generally ignores the Roman road terrace. This tractor track is shown on the 4cm:1km Ordnance Survey map as slightly sinuous, as was noted.

A road line, viewed at a distance, rises on the north slope of Stony Knowe from a ford of the Oak Burn at NT398403 (4j) for some 500 m south-west. Projected south-west this line would run on to the road terrace described above, and was at first thought to be part of the Roman system: later inspection identified this as a relatively recent hill-track, probably from Caddonhead farm.

(5) The Caddon Water Roman Road : a Critical Reappraisal.

20-12-88, WL FN: The Roman road line from Cauld Cleuch ford (4d), NT400421, to the ford of the Calfhope Burn (3a), NT414457, some 4.0 km to the north-north-east, was re-examined in detail. The following comments were offered by FN.

The course of the road over the pasture land to the Calfhope Burn, (2a) to (3a), is marked by a low earth mound riddled with rabbit holes, clear indication of its artificial nature. Stones in the burn bed and approach mound traces on both banks confirm that the road forded the Burn. This final line suggests that the Roman road should cross the Lugate Water rather than holding to the west bank of the Water (a double ford above a confluence reduces the stream flows to be crossed).

The turf bank of the old enclosure on Shiels Rig runs over the ancient road, closing it. Heavy stones protruding from the enclosure bank at this point might suggest that the road closure post-dated the main enclosure build, but more probably reflect materials to hand at the road-mound. At the time of building the enclosure, the road may have been used for a time for local traffic, e.g. droving or fetching peat, but it was no longer recognised as a through route. A hollow-way, probably of medieval date, follows the primary Roman terrace on Shiels Rig, but there is no trace of any stone-metalled secondary road.

At NT412455, close to location (2b), turf had been removed over the road mound to build a shooting butt nearby, showing that the road was no longer recognised in the 19th century, and revealing that peat growth over the primary road was considerable, some 0.3 m, and consistent with its abandonment in the Roman period.

Over the Rig crest from about NT408452, (2f), FN suggested a somewhat higher line leading to the head of the wash-out chasm (Figure 2i, 2j), but in discussion accepted the primary, Roman, road to have been broken by the wash-out.

The total separation of primary and secondary road systems at the minor burn wash-out at the head of the Scroof Hill terrace, NT401441 (2m), is regarded by FN as the most important single piece of evidence for the antiquity and Roman nature of the primary terrace and road mound. As described above, the primary road crossed the burn directly, the gully leaving a fine profile of its terrace and road-mound on the crest of the north bank, while the secondary road crossing is marked by a grassy baulk in the burn gully bottom, and a narrow and very diagonal ramp up the steep north bank. The primary road can be convincingly traced to a broad ancient terrace over the head of the Nether Shiels Burn.

FN agreed that the road section (1d) at the recent drain cut showed the original Roman terrace, 9.0 m wide, and on it the Roman road-mound disturbed by the secondary road. He considered the stone base of the later road to be contemporary with it, rather than an exposure of a stone road-bed underlying the Roman road-mound. The point has significance for the quality of the make of the secondary road.

The 'hanging' road terrace at the foot of Broomylee Rig, (2b), FN agreed, could only be explained by massive erosion of the Caddon Water valley floor 'in antiquity'.

The features noted in previous surveys from this point to NT398413 (4f) at the foot of Maiden Law, some two kilometres distant, were agreed to represent a broad roadway terrace washed out in antiquity at its crossings of the Cauld Cleuch and Hersie Burns. Similar extensive wash-out has been noted (Newall and Lonie, 1995) on the Glenwhern Roman road north of Minny E' Hill and by FN on the Roman road east of Gatehouse of Fleet, Galloway.

In summary, nowhere along the six-kilometre length examined did any secondary structure lie under the 9.0 m road terrace or its road-mound, and FN was satisfied that this road structure was primary, ancient and very probably Roman.

20-12-88, WL FN: Search-survey was continued along the foot of Maiden Law. Without difficulty the broad Roman terrace was traced to the Maiden Burn (unnamed on the Ordnance Survey maps available) at NT397412 (4k), some 300 m upstream from the service road. The approach to the burn from the north-east is on a broad embankment some 50 m long, while that from the south, for the road angles sharply at the burn, is on a mounded terrace, 9.0 m wide, clear for 100 m. The burn cuts some 2.0 m deep, 3.0 m wide between the ends of these approaches and while there is no culvert structure there, immediately above the crossing point there is evidence, in a small deep pool, of 'culvert entry works', such as has been found on the Glenwhern Roman road. All these features provide additional evidence of a major Roman road.

As the road terrace climbs south, curving west, on the south-east spur of Maiden Law, a recent ditch to the back of the terrace, and attendant erosion, disturb the original terrace to about NT397407 (4m), where the ditch fades out. The ditch is probably associated with the original water supply to Caddonhead farm by a lade from the Maiden Burn just below the road terrace crossing. The present supply is from a cistern some 200 m down slope. The ditch and lade water system confirms that the road had gone out of use before the farm was built.

Gathering darkness brought further exploration to a halt, but we were well satisfied with the progress of our Roman road.

31-12-88, WL BWL: Fortunately BWL enjoys hill-walking, even on Hogmanay. We picked up the Roman terrace at the Maiden Burn and followed it round the south-east spur of Maiden Law. The side-slope is slight and the Roman terrace correspondingly shallow. Where obscured by heather burning the terrace is generally marked by differentiated grass growth. The 300 m long descent eastwards to the Oak Burn at NT393406 (4n) is on a broad terrace, 10 to 12 m

wide, at a gentle gradient, about 1:14 (7%). On the final approach to the Oak Burn the roadway becomes an embankment of similar width some 2.0 m high, broken through in several places by the flooding of the burn. At the Burn the broken road mounds overhang the burn bed by some 3.0 m at (4n).

This breakthrough feature is common on Roman roads at water-courses and results from the blocking of a culvert. Floodwater penned behind the approach embankments finally overtops them and washes out one or more weaker points. The watercourse may remain in its new course, producing a kink in the stream that persists to the present day. Examples on Dere Street are at Greenside, NT575306, where it crosses the West Burn; at NT565363, where it crosses the Packman's Burn; and at NT457572 on Kings Inch where it crosses the Dun Law burn (Lonie, *Personal Journal*). A well-consolidated embankment, such as the Romans built, is required to hold the stream in its new course. However, this does not appear to have occurred at the Oak Burn crossing.

It may be suggested that here the culvert was not blocked, but that the deluge of which we have so much evidence overwhelmed the culvert capacity, overtopped and breached the embankment and then returned to the culvert course. The multiple breaches of the road embankment suggest a single major incident rather than a prolonged or intermittent smaller-scale episode.

The catchment of the Oak Burn above the Roman crossing is only 42 hectares (105 acres). Ground saturation followed by torrential rain would seem to have been required to give the observed degree of washout and breaching. The thawing of deep snow may have been a factor. We are on familiar ground now with unprecedented inundation in southern Britain in late 2000 AD, though to date the Tweed River basin has not been so affected.

The Roman road south from the Oak Burn crossing is clear on the east slope of Seathope Law, rising to the col at NT391399 (4h), where the road was found on the survey of 13-11-88. It may be commented that this Roman road maintains gentle gradients and its general course south-south-west on this 5.0 km length from Scroof by contouring around the hill ridges and by sharp changes of direction at burn crossings. This sinuous but still purposeful behaviour is observed elsewhere on upland Roman roads, as on the Glenwhern Roman road.

7-4-89, WL: On this later walk the Roman road terrace on the eastern slope of Seathope Law was again followed up to the col (4h), on this occasion walking on the terrace rather than just below it. The latter technique has advantages when tracing terrace structures. At NT393403 (4o) a ditch dug recently partway across

the terrace has disturbed large stone slabs, probably those of a Roman culvert. This point is immediately above the head of a small tributary of the Oak Burn and the ditch is wet.

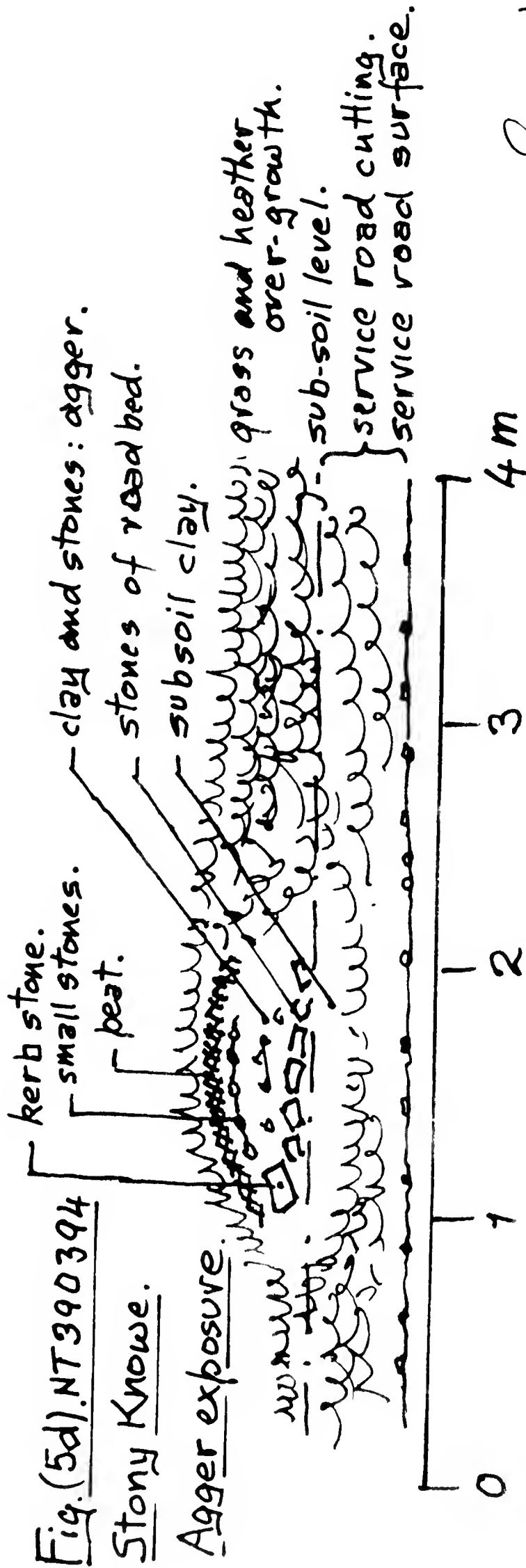
On this rise to the col a secondary road, some 1.5 to 2.0 m wide, crosses the Oak Burn on steep ramps upstream of the Roman structure and runs as a hollow-way at first upslope of the Roman road, then crossing the latter to run on its lower side for some 300 m about NT393403 (4o), and finally converging with the Roman road as it crests the col. This secondary road was not observed on or near the Roman road line on the Maiden Rig traverse. It may have turned down the Oak Burn. There is evidence of recent light tractor use on the secondary road though it is clearly an earlier track.

(6) The elusive Roman Fort at Holylee

Newstead fort, Trimontium, lies 22 km to the east of Holylee by the River Tweed valley route, and Lyne fort 23 km to the west. A fort at Holylee would offer inter-fort distances very close to the norm for the military zone. Further, a Roman fort at Holylee would not only provide a terminus for the Caddon Water road but would also justify the uncharacteristic line of the Tweed Valley Roman Road westwards from Thornylee farm into the narrow gorge of the River Tweed between Thornilee Craigs and Elibank Craigs, by providing a guard for the passage of the gorge and for a possible ford of the Tweed thereabouts.

The Roman road descends the left bank of the Tweed under Thornilee Craigs as if to cross the river at about NT398367 (5b). The former railway line bridged the river at exactly that point. Roman intentions thereabouts are further obscured by both the A72 trunk road and a former coach road entering the gorge and holding to the left bank, all as Figure 5b. In medieval times this gorge was guarded by Elibank Castle, NT397363, high on the right bank of the river opposite Holylee. Descending tracks and terraces below the castle suggest a ford of the River Tweed in the vicinity. Woodlands about the castle prevent cursory inspection, and closer inspection has not been made.

That the Tweed Valley Roman road held to the left, Holylee bank of the river is strongly suggested by a camp at Innerleithen, NT334362, the fine stretch of Roman road over the head of the Edston Burn about NT215415 some 2.5 km west of Peebles, and Lyne fort, NT187405, all on the left bank of the river, at distances west of Holylee of 6.0, 19, and 23 km respectively. The 1st century Roman fort of Easter Happrew lies within a kilometre of Lyne immediately over the Lyne Water. The Water is seldom a serious barrier: bridge abutments have not been reported.



23-2-01

As already noted, a Holylee site would offer normal inter-fort distances from Newstead fort and the Easter Happrew and Lyne forts.

3-4-89, WL: R.A.F. air-photographs of the Holylee area, formerly held by the Air Photographs Section of the Scottish Development Department, and now by R.C.A.H.M.S., showed heavy development of the area around Holylee by farm buildings, and a large house with landscaped gardens. No suggestion of any Roman fort feature could be discerned. Other prints were helpful in confirming the line of the Caddon Water Roman road, and in suggesting possible routes northwards from its present terminus near Compass Slack.

7-4-89, WL: By prior arrangement, a visit was paid to Holylee, where the estate manager was most helpful and enthusiastic on matters of local history and archaeology, as old coach roads, old bridges, hill tracks, and areas of former upland cultivation. The area of immediate interest, the broad platform around NT388377 (5a), on the lower ridge between the Gatehopeknowe and Holylee Burns, is mainly woodland and gardens associated with Holylee House. Search there failed to discover any trace of Roman fort features. On the neighbouring ridge foot of Gatehopeknowe (5c), an equally suitable site for a small fort, thorough search again failed to discover any traces of Roman structures.

The visit continued with a walk up Gate Hope to Kill Brae to view the sites mentioned by the estate manager, then by Seathope Hill on to Seathope Law (542 m), where a search for a signal station base was negative. Magnificent views, local and distant, included the whole Roman road line from Holylee to Scroof. The Roman road terrace on the east slope of the Law was gained, and was followed over the col and down towards Holylee.

Where the present dry-metalled estate road cuts across the Roman road at NT390394, a section of the Roman structure is exposed. All of road terrace, stone road-bed, agger mound, and gravel road metal show in the section, as Figure 5d. Musing on the descent, such a section had been anticipated and it was gratifying to find it.

The bearing of the Roman agger as it enters Holylee farmland, and is there obliterated, was carefully noted. The road is directed towards the east side of the ridge rather than centrally. This is a line of uniform gradient directed very close to Old Holylee House (1727).

21-4-89, WL: W.L. presented himself at Old Holylee House. There he was rescued by the occupant, Mr. R. Johnson, from the attentions of family and an

overly protective dog. His interest extended to allowing me to explore the garden and woods around the house, but no Roman period structures or artefacts were found.

Yet another visit was paid to the known length of the Tweed Valley Roman road running east to west for some 700 m about NT404366 (5e). The eastern end of this length is now afforested over, and towards its western end the Roman road terrace is now overgrown by impenetrable gorse. The Roman road, backed by a hollow-way, emerges from the gorse for some 100 m, only to converge with and run under the coach-road, presumably of 18th and 19th century date. The Roman road again emerges briefly, only to disappear under the present A72 main road, as does the coach-road. The abandoned Tweed valley railway line lies immediately to the south, as Figure 5b. As argued above, the Roman road almost certainly held to the left, north bank of the Tweed and lies under the present road for the kilometre-long passage under Thornylee Craigs.

From this point westwards, the north bank of the River Tweed and the mouths of the Thornylee and Gatehopeknowe Burns were examined for Roman road traces. From Holylee farm road junction to Gatehopeknowe Cottage entrance, the coach-road remains may readily be traced, though they are much broken by mature tree growth and farm use. The old bridge of the Gatehopeknowe Burn still stands. No trace of any Roman road structure was found.

10-12-00, WL BWL: On a walk for pleasure in Gate Hope, an old road or path terrace, some 3.0 m wide in the woodland but opening to some 10 m, was noted to run downslope north-east for some 100 m about NT386378, just north of (5c), into the gorge of the Gatehopeknowe Burn east of this point. The gorge is some 40 m deep and steep-sided, and forms a considerable barrier that would almost certainly force the main Roman road in the Tweed valley to hold close to the river, as do more recent roads. The old path terrace noted is probably associated with Old Holylee House estate or garden. A fine grotto folly on the high right bank of the burn 200 m downstream, at NT387376, supports a garden association.

(7) The Caddon Water Roman Road : an Official Appraisal

30-4-89, WL PD: The purpose of this outing was to acquaint Mr. Piers Dixon, then Scottish Borders Region Archaeologist, with the Roman road findings. From Holylee farm we gained the Roman road and followed it without difficulty for the 3.5 kilometres to the Hersie Cleuch. PD was satisfied that the structure was very probably a Roman road and was particularly impressed by the road lengths below

Stony Knowe and Seathope Law, where both lengths show a fine agger on a broad terrace.

At Hersie Cleuch, two lades noted there were followed down to a mill-dam at Caddonhead Farm, providing explanation for the extraordinary thirst of the farm. PD, interested in early farming, was pleased with this finding.

On our return to Holylee the Roman road terrace was traced as before to the field wall at NT389393 (4i), but again was lost in the field below. Traces of the road, however, were noted to enter the conifer plantation at NT389386 (5f). This point location indicates that the road ran down, as previously surmised, to near the mouth of the Holylee Burn, there to meet the Tweed Valley Roman road.

Conclusions

A major Roman road can be traced from Thornylee in the Tweed valley to Compass Slack in the Lugate Water valley, a distance of some 9.0 kilometres through hilly terrain. En route, the road crosses two major watersheds at altitudes of 453 m and 433 m (1,494 and 1,429ft) respectively.

Throughout the length traced, the road runs on a prepared terrace or roadway 9.0 to 11 m wide. Central on the roadway is a stony road-bed some 4.0 m wide, on which rests an agger or road-mound of the same width, some 0.4 m high, the agger is kerbed with somewhat larger stones than those of the road-bed. At one of three section exposures the agger was crowned with a road surface of small stones. At several cross-section exposures, ditches lie to one or both sides of the roadway. The construction is entirely compatible with, indeed definitive of, a Roman road. The complete absence of roadside quarry-pits is discussed below, as is a 50 m length of 'multiple roads' on Shiels Rig. Mature peat cover of the entire structure, generally 0.3 m deep, is compatible with abandonment in the Roman period.

In the length traced, the road crossed and was later washed out by seven watercourses. In general the Roman road approaches now overhang the stream-beds by 2.0 to 3.0 m. Several good road structure sections are thereby revealed. At the crossing of the Caddon Water valley, some 100 m width of the valley floor and the road on it has been entirely removed by fluvial action, leaving the truncated road overhanging the steep west bank. On the south-east slope of Shiels Rig a minor stream has carved a wash-out chasm 20 m wide, 12 m deep and 100 m long across the road-line. A period of torrential rain, even deluge, in Roman or post-Roman times is indicated.

The road-line is generally twinned by a secondary track some 1.5 to 2.0 m wide. This invariably follows a separate line at stream crossings, generally 2.0 to 10 m upstream and with approaches less than 0.5 m above the present level of the stream-bed. Elsewhere this track is sinuous, crossing to above and below the Roman road. The depth of mature peat over this secondary track suggests it may have been in use in the 12th or 13th centuries, a time of relative peace and prosperity in the Borders. Such an early high medieval dating is supported by the degree of slump on the Scroof Hill terrace subsequent to the secondary track abandonment.

Discussion

The line of the road, north-east from the upper Tweed valley towards the head of Lauderdale, skirts to the south-east of the massif of the Moorfoot Hills, an area of some 200 square kilometres of hills rising generally to over 500 m. By the same token, the road encompasses the rich pasture uplands to the south-east which became Lauder Common and the wealth of Melrose Abbey. In this line there are overtones of both aggression and protection. The control of transhumance routes, as suggested by the authors for Roman activity in south-west Scotland, may have been an incidental but powerful effect.

An obvious function of the road was to shortcut, by a full day's march, 20 to 25 km, the distance from the upper Tweed and points west to upper Lauderdale and points north. Just how this facility might have been employed strategically, or tactically, must be speculation. Its mere presence would have psychological effect. Military works are notoriously wasteful of resources until required.

Plausible Roman period termini for traffic on the Caddon Water road are the Easter Happrew/Lyne fort complex in the upper Tweed basin and the Oxton/Channelkirk fort and major camp complex in upper Lauderdale. The distance between these locations is 46 km, i.e. two days' march. The only known Roman site en route is the camp at Innerleithen. This camp is 18 km east of Lyne fort, and 46 km west of Newstead major fort by the Tweed Valley road. By the Caddon Water road it is 27 km from Innerleithen to Channelkirk, 29 km to Oxton. Innerleithen camp therefore does not appear to be an element in the Caddon Water road system. The case for a Roman station near Holylee is strong. Efforts to locate this should continue, despite the several failed attempts to date.

FN comments that although Oxton Roman fort, with its 225m-long wagon enclosure, seems a likely staging post, its occupation is represented by a single 2nd century sherd, and there is still a stiff climb to Soutra pass. Soutra itself, a

monastic and possibly Roman site, stands not only on Dere Street, but was, in the high medieval period, the focus of tracks from the south-west, and should not be forgotten as a possible Roman road junction.

The widths of the roadway and agger are as found elsewhere on minor Roman roads in the military zone of North Britain. The construction of the road is uniform and to a high standard. In these aspects of width and quality the Caddon Water Roman road has parallels in the Devil's Causeway, and in the Roman roads in Glenwhern, in the Etrick Valley and over the Menteith Hills. All four of these roads are of Flavian period origin and use, to judge from the occupation periods of forts on them. A Roman road over comparable terrain known to date to the Antonine period is that from Lurg Moor fortlet to Outerwards fortlet. This road is of similar width of agger, but the road comprises, in section, no more than a lens of clay and stones laid directly on peat, or on a built-up roadbed of peat. This perfunctory roadbed must have been found from experience to be adequate for the light patrol, supply and communication traffic expected on the road. Comparison with the robust, institutionalised builds cited, again suggests the Caddon Water road to be of Flavian origin.

The route of the road through the uplands is 'confident'. Such confidence implies either aggressive strength in hostile land, or carefree passage in peaceful land. A hint of the former is given by the possible watch-tower on Shiels Rig, monitoring some 10 km of the known and probable road line. It has been standard Imperial practice to occupy the high ground ahead of troops moving through hostile land. If this assessment is correct, a consolidation phase of the Roman occupation is indicated for the road construction, say about 96 AD, on withdrawal from the Highland boundary limes, when Newstead became the control centre of the military zone.

The rolling Border hills, as the hills elsewhere in north Britain other than the jagged Western Highlands of Scotland, are difficult, or excellent, campaigning ground. Everywhere they are passable, and everywhere offer dead ground for a raiding party or small army in half a day's march or an hour's ride all around. The Border reiving, the Moss trooping, and the brilliantly evasive campaign of Robert I against Edward III, culminating in the night attack of Stanhope Moor, all illustrate the power of these hills to conceal and surprise. In the line of Roman High Street over the Cumbrian mountains and of Roman Dere Street through the Cheviot Hills there is more than a hint of dominance, whatever other purpose these roads may have served. The Caddon Water road has a similar deliberate arrogance.

The altitude to which the road ascends suggests that its reliable use in winter

was not envisaged, unless the winter climate in Roman times was significantly warmer than the recent present. If so, higher winter rainfall was to be anticipated. The deluge evidenced by the washout of the Caddon Water road was obviously not anticipated. At all seven watercourses crossed, the road has been washed out to a depth of some 3.0 m. Secondary use of some lengths of the road and stream crossings, plausibly in the 12th and 13th centuries, suggests this washout to have occurred soon after the road's abandonment or even to have occasioned that abandonment. There does not appear to have been comparable stream erosion in the seven or eight centuries since medieval use.

The rains which caused the Shiels Rig and Scroof Hill washouts must have been heavy and prolonged, for the catchments concerned are of only some 25 and 10 hectares (62 and 25 acres) respectively. There is evidence elsewhere of torrential rain and flooding in or soon after the Roman period in North Britain. Bochastle fort at the mouth of Strathyre was severely damaged by flood, but rebuilt on the same site. The fort was occupied only in the early Flavian period, c. 84 to 86 AD, giving a very narrow date range for the deluge there, but not necessarily elsewhere. The Kale Water at Towford has washed out much of one Roman camp. Other camps there are sited well clear of the Water. While the damaged camp is probably early, a 1st century date for the damage cannot be reliably deduced since camps generally seem to have been built on fresh ground rather than re-occupied.

The absence of quarry-pits along the entire length of the road indicates that it was never repaired. It therefore did not find useful Roman function after the occupational phase in which it was built. To judge from the absence of wear of the road surface, the road was little used even in its active phase. While the making of the road in the Antonine phase cannot be excluded, it seems probable that it was made and had function only in the later Flavian phase of Roman occupation.

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